ISS NATIONAL LABORATORY®

ISS National Laboratory Q4FY24 Report

Quarterly Report for the Fiscal Year 2024 Period July 1, 2024 – September 30, 2024

Table of Contents

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Q4FY24 Metrics

ISS NATIONAL LAB UTILIZATION AND OPERATIONS TARGET METRICS

TARGET METRICS	FY24 Q1	FY24 Q2	FY24 Q3	FY24 Q4	YTD FY24 Total	FY24 Target	FY24 Stretch
DEMAND FOR ISS RESOURCES							
1) Ratio of awardable proposals evaluated to expected awards (cumulative)	3:1	3:1	3:1	3:1	**3:1**	**3:1**	**N/A**
2) Leverage ratio of external funding to CASIS funding (cumulative)[a]	9:1	6:1	2:1	2:1	**2:1**	**1:1**	**2:1**
FUNDAMENTAL SCIENCE							
3) Fundamental Science projects selected	--	--	--	9	**9**	**8**	**10**
4) External funding supporting Fundamental Science users of the ISS National Lab	$--	$--	$--	$4.7M	**$4.7M**	**$4M**	**N/A**
APPLIED RESEARCH & DEVELOPMENT							
5) Applied Research & Development projects selected	1[c]	0	3	0	**4**	**8**	**10**
6) Ratio of external funding to CASIS funding (self-reported) supporting Applied Research & Development users of the ISS National Lab (cumulative)[a]	--	--	--	--	**--**	**1:1**	**2:1**
TECHNOLOGY DEMONSTRATION							
7) Technology Demonstration projects selected	3	2	3	5	**13**	**8**	**10**
8) Ratio of external funding to CASIS funding (self-reported) supporting Technology Demonstration users of the ISS National Lab (cumulative)[a]	9:1	6:1	2:1	2:1	**2:1**	**1:1**	**2:1**
EDUCATION & OUTREACH							
9) Education & Outreach projects selected	--	--	--	5	**5**	**4**	**5**
10) New Corporate or OGA sponsorships agreements	0	0	0	1	**1**	**1**	**3**
PROPOSAL MANAGEMENT							
11) Time from solicitation close to selection/non-selection notification (cumulative)	59 days	63 days	60 days	62 days	**62 days**	**≤65 days**	**≤60 days**

ISS NATIONAL LAB UTILIZATION AND OPERATIONS TRACKING METRICS

The following metrics have no target for FY24 but will be tracked internally and discussed in face-to-face meetings with NASA.

TRACKING METRICS	FY24 Q1	FY24 Q2	FY24 Q3	FY24 Q4	YTD FY24 Total
OVERALL PROJECT QUALITY AND DEMAND					
1) Percent of proposals reviewed that were awardable (cumulative)	74%	76%	80%	78%	**78%**
2) Percent of proposals reviewed that were high quality (cumulative)	3%	8%	20%	31%	**31%**
3) Percent of high-quality proposals not selected (cumulative)	0%	0%	0%	30%	**30%**
4) Percent of completed projects that met ≥80% of their research objectives (cumulative)	0%	23%[c]	36%	44%	**44%**
5) Percent of completed Technology Dev/Demo and In-Space Production projects demonstrating technology readiness level (TRL) advancement (cumulative)	75%[c]	57%[c]	69%	72%	**72%**
6) ISS National Lab projects selected	4[c]	2	6	19	**31**
7) Users by new/returning					
(a) ISS National Lab return users	2	0	1	5	**8**
(b) ISS National Lab new users	2[c]	2	5	14	**23**
8) Projects by type					
(a) Commercial	3[c]	2	4	6	**15**
(b) Academic/nonprofit	1	0	2	13	**16**
(c) Government agency	0	0	0	0	**0**
9) Multiplier on CASIS grant funding committed (cumulative)[a]	3:1	3:1	1:1	2:1	**2:1**
10) Active solicitations	3	3	1	2	**9**
11) ISS National Lab concepts received	16	108	95	122	**341**
12) ISS National Lab proposals received	37	14	51	27	**129**
13) Time from selection notification to agreement draft sent to principal investigator (cumulative)	76 days	73 days	67 days	68 days	**68 days**
14) Time from agreement draft to award (cumulative)	50 days	56 days	47 days	50 days	**50 days**
15) Time to flight	21 months	17 months	N/A	17 months	**18 months**

TRACKING METRICS (Continued)	FY24 Q1	FY24 Q2	FY24 Q3	FY24 Q4	YTD FY24 Total
PAYLOADS DELIVERED					
16) Commercial Service Provider Facility Utilization payloads delivered	12[c]	39	N/A	16	**67**
(a) Percentage of Commercial Service Provider Facility Utilization payloads flown that met mission success criteria (previous fiscal year quarter)[b]	87%[c]	100%[c]	95%	100%	**96%**
17) Education & Outreach payloads delivered	2[c]	3	N/A	2	**7**
18) Fundamental Science payloads delivered	3	5	N/A	6	**14**
(a) Percentage of Fundamental Science payloads flown that met mission success criteria (previous fiscal year quarter)[b]	71%	100%	100%	100%	**93%**
19) Applied Research & Development payloads delivered	1	4	N/A	3	**8**
(a) Percentage of Applied Research & Development payloads flown that met mission success criteria (previous fiscal year quarter)[b]	100%	100%	N/A	100%	**100%**
20) Technology Demonstration payloads delivered	1[c]	4	N/A	2	**7**
(a) Percentage of Technology Demonstration payloads flown that met mission success criteria (previous fiscal year quarter)[b]	100%	50%[c]	N/A	N/A	**75%**
21) Total ISS National Lab-sponsored payloads delivered	19[c]	55	N/A	29	**103**
COMMUNITY ENGAGEMENT AND INVESTMENT					
22) New partnerships formed	2	4	1	2	**9**
23) Total external funding committed	$4,049,227	$725,996	$8,492,498	$11,536,282	**$24,804,003**
24) Funds raised post award and postflight by startup companies with ISS National Lab-sponsored flight projects					
(a) Funds raised postflight	$56.5M[c]	$6.4M	$70.5M	$13.1M	**$146.6M**
(b) Funds raised post award	$56.5M[c]	$10.8M[c]	$72.5M	$15.5M	**$155.4M**
25) External funding committed from new OGA partnerships	$0	$0	$0	$0	**$0**
26) New educational partnerships	0	3	0	0	**3**

TRACKING METRICS (Continued)	FY24 Q1	FY24 Q2	FY24 Q3	FY24 Q4	YTD FY24 Total
COMMUNITY ENGAGEMENT AND INVESTMENT (CONTINUED)					
27) Number of high school and higher education students contributing to research projects completed during the fiscal year	27[c]	6[c]	22[c]	16	**71**
28) Total individuals participating in ISS National Lab Education & Outreach programs and projects (self-reported)	1,576,201	2,154,605	113,733	535,618	**4,380,157**
29) Total individual users of ISS National Lab online education products (self-reported)	6,040,751	3,759,642	1,114,993	2,163,304	**13,078,690**
IMPLEMENTATION PARTNERS AND COMMERCIAL SERVICE PROVIDER ACTIVITIES					
30) Number of Implementation Partners (cumulative)	33	33	33	33	**33**
31) Number of Commercial Service Providers (cumulative)	14	14	14	14	**14**
32) New Umbrella User Agreements executed	0	0	0	0	**0**
33) New commercial facilities added	0	0	0	1	**1**
34) Commercial facilities (cumulative)	24	23	23	23	**23**
35) RRFs submitted	14	23[c]	33	28	**98**
36) RRFs approved	12[c]	22	33[c]	22	**89**
37) RRF approval time (cumulative)	9 days	7 days	7 days	7 days	**7 days**
RESOURCE UTILIZATION					
38) Crew time (actual vs. increment pair – 3 months allocation)	66%		61%		**64%**
(a) Ascent flight resources					
Upmass	53%	150%	N/A	68%	**90%**
Cold stowage	74%	79%	N/A	78%	**77%**
Big bags	0%	84%	N/A	67%	**50%**
Powered lockers	75%	73%	N/A	0%	**49%**
(b) Facility resources (reported in Q2 and Q4)					
Commercial facilities	56%		48%		**52%**
JEM airlock	67%		100%		**83%**
Life Sciences Glovebox	117%		67%		**92%**
Microgravity Science Glovebox	90%		0%		**45%**

TRACKING METRICS (Continued)	FY24 Q1	FY24 Q2	FY24 Q3	FY24 Q4	YTD FY24 Total
RESOURCE UTILIZATION (CONTINUED)					
39) Number of payloads that did not turnover per the nominal delivery schedule	2	3	N/A	10	**15**
Principal investigators	0	0	N/A	1	**1**
Implementation Partners	2	3	N/A	5	**10**
CASIS	0	0	N/A	0	**0**
NASA	0	0	N/A	4	**4**
40) Number of re-flight experiments flown	0	1	N/A	1	**2**
Fundamental Science	0	0	N/A	0	**0**
Applied Research & Development	0	0	N/A	1	**1**
Technology Demonstration	0	1	N/A	0	**1**
Education and Outreach	0	0	N/A	0	**0**
Commercial Service Provider Utilization	0	0	N/A	0	**0**
41) Number of payloads ready to fly that were left on the ground due to limited resources (upmass, crew time, cold stowage, etc.)	2	1	2	0	**5**
42) Number of payloads removed from the manifest after the freeze date because the principal investigator/payload could not make the flight	2	0	0	0	**2**
OVERALL PROJECT RESULTS					
43) Number of peer-reviewed papers including those accepted for publication in Tier 1 journals	9[c]	23[c]	12[c]	7	**51**
44) Number of new patents pending	0	0	0	1	**1**

a. CASIS awards funded with NASA MI&O are included.

b. Data is from previous fiscal year quarter. Whether a payload met research objectives often cannot be determined until it has been returned to the investigator and initial data has been reviewed.

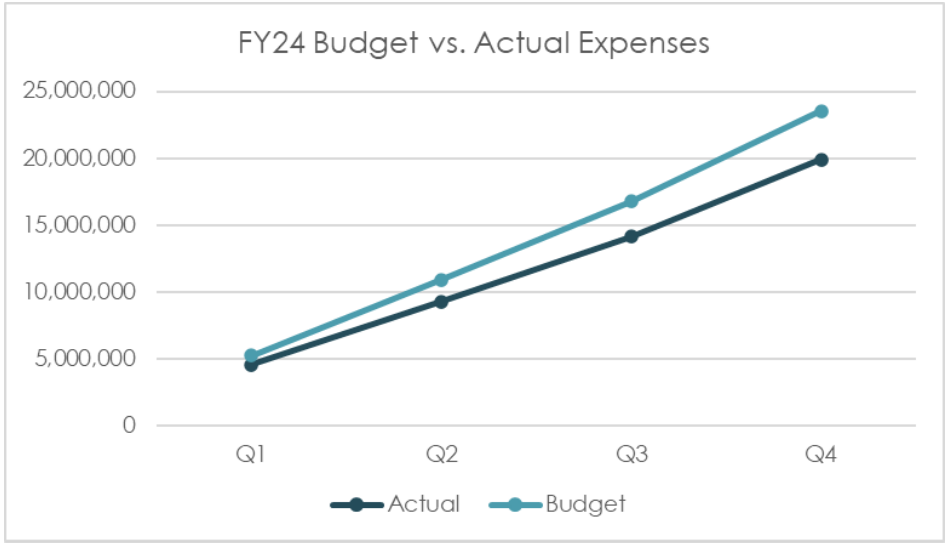
c. Additional/new data available after previous quarterly report completion.

FINANCIALS

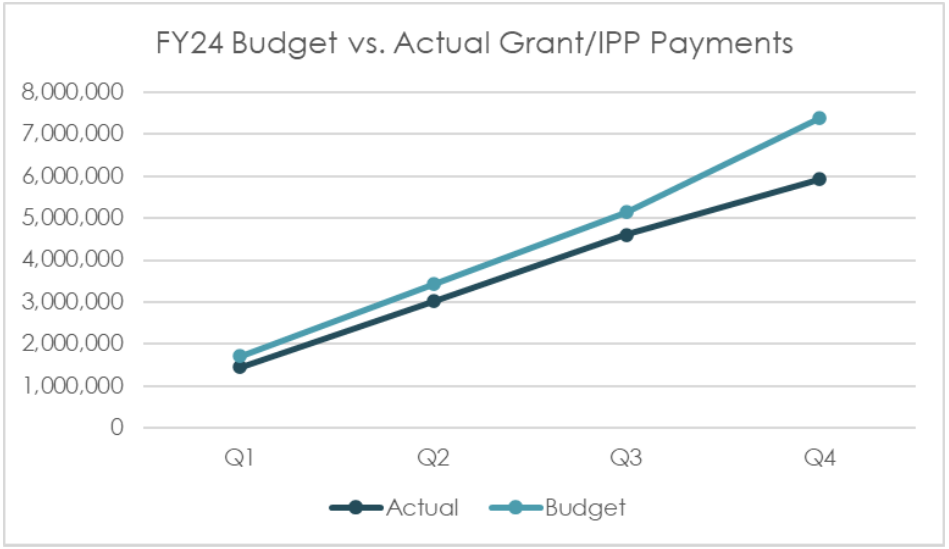
Business Status Report (unaudited)

Expenses	Q3 Actuals	Q3 Budget	Variance	Actual YTD FY24	Budget YTD FY24	Variance YTD FY24
Direct Labor	$2,216,474	$2,679,230	($462,756)	$9,114,563	$10,589,838	$(1,475,275)[a]
Subcontracts	$342,275	$366,947	($24,672)	$1,233,526	$1,500,378	$(266,852)[b]
Other Direct	$1,520,458	$1,176,500	$343,958	$2,585,686	$2,814,826	$(229,140)[c]
Travel	$177,999	$177,033	$966	$601,326	$626,050	$(24,724)
Office Supplies and Equipment	$149,247	$99,413	$49,834	$421,404	$608,577	$(187,173)[d]
Grants & Mission-Based Costs	$1,318,470	$2,229,456	($910,986)	$5,927,601	$7,369,692	$(1,442,019)[e]
Total Expenses	$5,724,923	$6,728,579	($1,003,656)	$19,884,106	$23,509,361	$(3,625,183)

a. Salaries and Benefits: At 9/30 53.5 full time equivalent vs 63.5 budgeted.
b. Subcontracts: Reduced legal costs as contracts personnel have been filled.
c. Other Direct: In part due to advertising having been adjusted below plan and trade shows scheduled but not attended.
d. Office Supplies and Equipment: Computer purchases have been capitalized and some reduced costs in subscriptions and memberships.
e. Grants: Recipient milestone payments shifted based on awardees' actual spend rates and their ability to successfully deliver milestones on schedule.



IPP = Implementation Partner Payments



IPP = Implementation Partner Payments

Breakout of ISS National Lab Grants Payments

	Q1FY24	Q2FY24	Q3FY24	Q4FY24	FY24 YTD Total
Academic	$477,216	$660,169	$1,381,942	$112,090	$2,631,417
Commercial	$978,131	$910,444	$195,396	$1,206,380	$3,290,351
Other Government Agency	-	-	$5,833	-	$5,833
Total	$1,455,347	$1,570,613	$1,583,171	$1,318,470	$5,927,601

Total Value of Grants Awarded *(i.e., funds committed toward future projects)*

	ACTUAL Q1	ACTUAL Q2	ACTUAL Q3	ACTUAL Q4	ACTUAL FY24
Total value of grants awarded[a]	$197,188	$417,648	$4,628,589[b]	$3,205,260	$8,448,685

a. Grants include awards to projects and programs as well as modifications and extensions. The ability to award new grants will be dependent on the availability of additional funding for the ISS National Lab.

b. Additional/new data available after previous quarterly report completion.

Breakout of Cooperative Agreement Funding

	Q1FY24	Q2FY24	Q3FY24	Q4FY24	FY24 YTD Total
Direct	46%	44%	43%	55%	47%
Indirect	22%	23%	25%	22%	23%
Grants	32%	34%	32%	23%	30%

IN-ORBIT ACTIVITIES

- Northrop Grumman's 21st Commercial Resupply Services mission, contracted by NASA, delivered more than 20 ISS National Lab-sponsored payloads, including the following (full details on the launch page):
  - Three U.S. National Science Foundation (NSF)-funded projects:
    - Florida International University is studying the ability of tiny, engineered particles to self-propel, with applications ranging from drug delivery to water desalination.
    - The University of Notre Dame is examining the physics of bubble formation in microgravity to develop highly sensitive biosensors for detecting trace substances in liquids.
    - Northeastern University and the University of California, Irvine are studying the physics of tiny particles of different sizes dispersed in a fluid that stick together to form a colloidal gel.
  - Two projects focused on the in-space production of stem cells:
    - Cedars-Sinai Medical Center is testing whether human induced pluripotent stem cells grow and divide faster in microgravity.
    - BioServe Space Technologies is developing a novel bioreactor for stem cell expansion and protocols for its use in space.
  - Sphere Entertainment Co. is in phase two of a technology development project testing the ability of Big Sky—an ultrahigh-resolution, single-sensor camera—to capture content from the ISS for its Sphere event venue in Las Vegas.
- NASA's ninth rotational crew mission (Crew-9) launched to the ISS carrying two new crew members along with a handful of ISS National Lab-sponsored payloads, including the following:
  - A student-led project through the Genes in Space program is studying the effects of radiation and the space environment on gene editing mechanisms to help develop methods to better protect astronauts.
  - The U.S. Air Force Academy and Rhodium Scientific are studying the root growth of the Arabidopsis plant, a member of the mustard plant family, at two different orbital altitudes to gain insight into crop production on long-duration spaceflight missions and in high-radiation environments.
- Crew members worked on the first payloads utilizing Airbus U.S. Space & Defense's new ArgUS Multi-Payload Adapter, which supports multiple smaller payloads in a standard slot on the Bartolomeo platform.

R&D PROGRESS AND SUCCESSES

- Seven new peer-reviewed journal articles were published, two of which are in top-tier journals (a full list of peer-reviewed publications related to ISS National Lab-sponsored research is available at www.ISSNationalLab.org/publications/):
  - Bond JE, Yeh AJ, Edison JR, et al. Diffusion, density, and defects on spheres. *Soft Matter*. 2024;20(32):6371-6383.
  - Dinesh B, Brosius N, Corbin T, et al. Effect of a deep corrugated wall on the natural frequencies and the Faraday instability of a fluid interface. *Phy Rev Fluids*. 2024;9(7):073902.
  - Garmany A, Yamada S, Park S, et al. Plasma biomarkers of first all-civilian space flight to the International Space Station. *Mayo Clin Proc*. 2024;99(9):1523-1525.
  - Kim S, Ayan B, Shayan M, et al. Skeletal muscle-on-a-chip in microgravity as a platform for regeneration modeling and drug screening. *Stem Cell Rep*. 2024;19(8):1061-1073.
  - Lidberg KA, Jones-Isaac K, Yang J, et al. 2024. Modeling cellular responses to serum and vitamin D in microgravity using a human kidney microphysiological system. *npj Microgravity*. 2024;10:75.
  - Mair DB, Tsui JH, Higashi T, et al. Spaceflight-induced contractile and mitochondrial dysfunction in an automated heart-on-a-chip platform. *PNAS*. 2024;121(40):e2404644121.
  - Walsh JSP, Graham S, Gorman AC, et al. Archaeology in space: The sampling quadrangle assemblages research experiment (SQuARE) on the International Space Station. Report 1: Squares 03 and 05. *PloS ONE*. 2024;19(8):e0304229.

- Key findings from FY24 peer-reviewed publications include:
  - Johns Hopkins University researchers demonstrated increased arrhythmias in cardiac cells during space missions and a sustained loss of contraction strength even after returning to Earth's gravity, validating microgravity as a model system for studying cardiac disease.
  - Through an NSF-funded investigation, a Palo Alto Veterans Institute for Research team found that microgravity mimics aspects of impaired skeletal muscle tissue development, and the addition of pro-regenerative drugs partially inhibits the microgravity-induced effects. The team also filed a patent for its skeletal muscle tissue chip platform in microgravity for muscle regeneration modeling and screening for new drugs to treat muscle loss conditions.
  - In a project supported by Axiom Space, researchers from Mayo Clinic found that 14 clinical biomarkers in blood samples taken from the civilian astronauts on Axiom PAM-1 displayed no major deviations from the normal values established for the general population.
- Two new products resulted from ISS National Lab-sponsored research: Michael David Winery Inc., which used yeast grown on the space station to ferment its commercially sold Zero Gravity wine, submitted a trademark application for Wine in Space Zero Gravity. Creatorspace developed an educational product called ISS Mimic that provides students with 3D print files to create a 1:100 model of the ISS that uses data and telemetry from the space station to mimic its movement.

LEO ECONOMY

Demand

- In Q4, 19 new projects were selected.
  - Six were selected through NSF/CASIS 2024 Collaboration on Transport Phenomena Research on the ISS to Benefit Life on Earth.
    - Northeastern University and Rensselaer Polytechnic Institute will study the dynamics of crystal growth and particle self-assembly in microgravity.
    - The University of Florida will examine the effect of parametric forcing on flow behavior and heat transfer in fluid systems with an interface.
    - The University of Illinois will investigate the freezing dynamics of sessile pure water drops in the presence of solutes.
    - The Georgia Institute of Technology will study free-surface flows driven in confined geometries in microgravity to clarify the flow physics of heat pipes.
    - Clemson University and the University of Massachusetts Amherst will investigate the motion of active particles at spherical fluidic interfaces in microgravity.
    - Kansas State University will study the impacts of microgravity on condensation frosting.
  - Three were selected through NSF/CASIS 2024 Collaboration on Tissue Engineering and Mechanobiology on the ISS to Benefit Life on Earth.
    - Micro-gRx will study how microgravity affects the biofabrication of vascularized organoids created from stem cells.
    - Temple University will study how microgravity affects the function of engineered fatty tissue.
    - The University of Notre Dame will create novel cancer-myeloid organoids in microgravity.
  - Five were selected through NLRA 2024-5: Leveraging the International Space Station for STEM Education and Workforce Development.
    - Creatorspace will implement ISS Mimic, allowing students in underserved communities to build an ISS model that mimics the real ISS.
    - Myriad Sensors Inc. will launch PocketLab in Space, integrating low-cost sensor technology into classrooms for students to conduct hands-on experiments with real data and video from the ISS.

        - Orion's Quest will introduce Space AGE Education, a curriculum involving students in space-based research on immune cell aging.
        - First the Seed Foundation will continue Tomatosphere, a program in which students grow tomato seeds that have traveled to space.
        - VRCORE will bring an immersive ISS virtual reality experience into K-12 schools.
    - Three were selected through NLRA 2024-4: Technology Advancement and Applied Research Leveraging the ISS National Lab.
        - Revolution Space will test a modular, chip-based ion array electric propulsion system.
        - Aurelia Institute will test the self-assembly of its adaptable, reconfigurable habitat concept.
        - Lyten will test its lithium-sulfur battery technology in the extreme space environment.
    - Two were selected through NLRA 2023-10: Igniting Innovation: Science in Space to Cure Disease on Earth.
        - The University of Texas MD Anderson Cancer Center will study T cells in space to better understand what controls them for developing new immunotherapy drugs.
        - The Wake Forest Institute for Regenerative Medicine will use organoids created from colorectal cancer cells to determine if chemotherapy works better in space.
- No project selections were made for NLRA 2023-6: In-Space Production Applications: Advanced Materials and Manufacturing.
- Three solicitations opened in Q4: the 2024 Technology in Space Prize (funded by Boeing and CASIS in partnership with MassChallenge); Tissue Chips in Space 2.0: Translational Multi-Organ Tissue Chip Systems for Drug Efficacy, Toxicity Testing, and Personalized Medicine in Human Health, Aging and Associated Diseases (funded by the National Center for Advancing Translational Sciences, which is part of the National Institutes of Health); and NLRA 2024-9: Igniting Innovation: Science in Space to Cure Disease on Earth (in partnership with NASA's Division of Biological and Physical Sciences).

Supply

- Leidos was awarded a NASA contract with a total potential value of $476 million to continue providing engineering and integration services for NASA's ISS Program and Artemis campaign.
- Sierra Space announced that its expandable space station technology successfully passed a seventh key validation test and a second full-scale structural test at NASA's Marshall Space Flight Center. The technology will be used for an initial stand-alone pathfinder mission and as a key element of the Orbital Reef commercial space station.
- Space Tango launched a new middeck locker facility called Microgravity-based Automated Manufacturing and Bioprocessing Outpost (Mambo), which provides an expanded contiguous volume for experimentation, higher power allocation, improved heat rejection, and increased data and commanding capabilities.

Investment

- Q4 continued to show a constrained but stabilizing capital access environment for early-stage companies in the space industry. Based on the publicly available data, $13.1 million of private capital and grant funding was raised during the quarter by startups that have completed a flight project with the ISS National Lab. To date, more than $2.2 billion of such startup funding has been raised post-ISS National Lab flight projects.
- Companies securing funding in Q4 include Revolution Space, SpaceBilt, Exum Instruments, and Orbit Fab.
- The ISS National Lab Investor Network includes 320 participants across financial and corporate investment organizations. To date, CASIS has facilitated 1,420 capital introductions between startups and investors in the ISS National Lab ecosystem. While investor interest in space startups has remained highly selective, our ecosystem remains a source of capital connections and potential future funding for early-stage companies planning studies on the ISS.

STEM EDUCATION AND WORKFORCE DEVELOPMENT

- High school students Isabelle Chuang and Julia Gross were announced as the 2024 Genes in Space competition winners for their experiment using phages, viruses that attack bacteria, as therapeutic agents to combat microbial infections in space.
- At the International Space Station Research & Development Conference (ISSRDC), a diverse panel of space professionals spoke about expanding the space industry workforce and the transformative power of inclusive practices and collaborative efforts within the space industry.
- The ISS National Lab hosted 50 college students for Student Day at ISSRDC. Students engaged with industry professionals and attended sessions to learn more about the dynamic space industry.
- The ISS National Lab selected two educators, Lisa Werner and Javier Montiel, for the Space Station Explorer Exceptional Educator Award and the Tony So Excellence in Education Award, respectively.
- Zero Robotics hosted its finals event, where 700 middle school students used their programming skills to navigate the Astrobee free-flying robots through several objectives on the ISS.
- CASIS signed a contract with corporate donor Advisist for a $30k multiyear pledge, with $10k per year for three years (2024-2026), to support ISS National Lab education-related programs and initiatives.
- The ISS National Lab hosted its annual Space Station Explorers partner meeting to discuss strategic priorities and a shift in focus toward workforce development.
- The ISS National Lab engaged with hundreds of engineering and science students at The Astronauts Memorial Foundation College and Career Readiness Event to discuss internship opportunities and other workforce development initiatives.

OUTREACH AND STAKEHOLDER ENGAGEMENT

- A new issue of *Upward*, the official magazine of the ISS National Lab, was published in Q4, highlighting successful results from three investigations: the University of Florida's tissue chip research on muscle loss; the University of Notre Dame's study on bubble behavior to improve biosensors for early cancer detection; and Clemson University's cotton genetics project, funded by Target Corporation, aiming to enhance disease resistance and drought tolerance in agriculture. Twyman Clements, Space Tango president and co-founder, wrote the perspective piece for the issue. *Upward* currently has more than 7,700 subscribers.
- The ISS National Lab website was redesigned to be more user-centric, creating specific paths to engagement and learning for key users. In Q4, the website had nearly 458,000 views in Q4, a 70% increase from Q4 FY23. The Igniting Innovation page was most viewed, with 43,000 views, followed by *Upward* with 18,000 views.
- ISSRDC 2024 marketing efforts and press releases highlighting notable speakers such as White House space policy leader Jinni Meehan and representatives from Boston-based space startups helped to generate 76,000 pageviews for the conference website.
- The ISS National Lab held two workshops at ISSRDC, one on biomanufacturing and workforce development and the other on advanced materials, with more than 170 attendees.
- In Q4, ISS National Lab press releases received nearly 40,900 views from the media, and more than 6,500 articles were published.
- ISS National Lab media coverage during Q4 includes:
  - SatNews discussed how the ArgUS Multi-Payload Adapter will enable new Earth observation insights.
  - R&D World and Interesting Engineering highlighted Notre Dame's research to improve precision in detecting cancer biomarkers.
  - A Winston-Salem Journal article discussed Wake Forest Institute's organoid research in space to develop new cancer treatments.
  - Astronomy Magazine covered archaeologists' first "space excavation" onboard the ISS.
  - New Scientist highlighted five ISS studies, including LambdaVision's research to create artificial retinas.

  - STEMCELL Science News highlighted five cancer projects selected through Igniting Innovation.
  - A Drug Discovery & Development article discussed MIT tissue chip research to accelerate osteoarthritis drug development.
  - The Stem Cell Podcast discussed stem cell research in space with the ISS National Lab program director for in-space biomanufacturing and a University of California, San Diego, researcher at the International Society for Stem Cell Research Conference.
- The ISS National Lab chief scientist participated in a panel at the International Society for Stem Cell Research 2024 Annual Meeting, briefed NASA Administrator Bill Nelson on the Igniting Innovation awards supporting the Cancer Moonshot initiative, served as a keynote speaker at the 2024 CME NASA Symposium and Earth & Space Sustainability Summit during the American Chemical Society Fall Meeting, and was a panelist at the Congress of Neurological Surgeons Annual Meeting.
- ISS National Lab staff presented at several key events, including the Biomanufacturing in Space Symposium, the Piedmont Triad Regenerative Medicine Engine Ecosystem Summit, the 98th ACS Colloid and Surface Science Symposium, and the American Society of Mechanical Engineers Summer Heat Transfer Conference.

Full Project Pipeline Details

Visit our project pipeline database for a complete list of ISS National Lab-sponsored projects, including flight status.